SCIENTISTS IN PARKS

NATIONAL PARK SERVICE

FY21 Program Report

STEWARDS INDIVIDUAL PLACEMENTS

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Scientists in Parks Annual Program Report
Fiscal Year 2021

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U.S. Department of the Interior
National Park Service
Natural Resource Stewardship and Science

ABOVE: SIP Interns Mariana Perez and Rachel Wright posing on a vehicle before heading on a water quality sampling trip at Buffalo National River, Arkansas (NPS photo).
COVER: SIP Intern Olivia Boraiko conducting a vegetation survey in a field of Black-Eyed Susans at Monocacy National Battlefield, Maryland (NPS photo).
BACK COVER: SIP Fellow Hannah Bonner in uniform and canyoneering gear in Zion National Park's (Utah) iconic Subway route (NPS Photo).

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Executive Summary

In 2021, the National Park Service launched the inaugural year of the Scientists in Parks (SIP) Program. The SIP Program consolidates the Geoscientists-in-the-Parks Program, the Mosaics in Science Diversity Program and the Future Park Leaders of Emerging Change Program into a single program focused on assisting national parks with natural resource management needs. SIP is committed to providing all aspiring professionals—especially those underrepresented in science—with a unique opportunity to work on important real-world projects while building professional experience and a life-long connection to America's national parks.

During the first year, the Scientists in Parks program placed a total of 213 interns in 117 park units (Note: The total number of interns includes SIP Mosaics. All other numbers does not include SIP Mosaics, which are reflected in a separate report). Projects supported natural resource management park needs. In FY21 the SIP Intern and Fellows participants were 23% racially diverse, 67% female, and 68% reported having a Bachelors Degree. The SIP interns' work contributed 117,592 service hours, or the equivalent of 56 years of full-time work on needed natural resource science projects for the NPS at a cost of approximately $3M. The SIP program is run in partnership with Stewards Individual Placement Program, a program of Conservation Legacy, The Geological Society of America, The Ecological Society of America , and Environment for the Americas.

SIP Intern Sadie Textor taking dark sky measurements using a unihedron sky quality meter at Yovimpa Point, Bryce Canyon National Park, as part of the compliance for the park's International Dark Sky designation (NPS photo)

"I believe that my project made a meaningful impact on the NPS's assessment of the paleontological value of Badlands National Park. The land that I surveyed yielded some amazing, research-worthy specimens that will contribute much to our knowledge of prehistoric life"

Statement of Purpose

The Scientists in Parks (SIP) Program is administered by the National Park Service (NPS) Natural Resources Stewardship and Science Directorate (NRSS), in partnership with the WASO Youth Programs Division and several non-governmental partner organizations. The SIP Program provides an easy to use mechanism by which NPS parks, networks, regions, and programs can hire non-federal interns to undertake projects that address natural resource management issues. Simultaneously, the SIP Program affords SIP interns a high-quality work experience that inspires and develops the next generation of diverse park stewards, and fosters a life-long connection to the National Park System. SIP positions may vary considerably in complexity, length, discipline, and skill set, in accordance with the particular needs of NPS units and abilities of the SIP participants.

SIP manages two seasons of positions that contribute to natural resource management issues in Biological Sciences, Physical Sciences, Social Sciences, and Communication & Education. Positions within these disciplines must address one or more natural resource management categories, including—but not limited to: air quality, climate change, geology, hydrology, night skies, paleontology, and soundscapes.

Program Objectives

- Meet park natural resource management needs
- Provide interns with meaningful natural resource management experience to foster lifelong connections to the NPS and improve their career potential
- Increase diversity within the natural resource ranks of the NPS

Types of Positions

Five position types were offered in FY21 (listed below). Scientists in Parks opened the first call for proposals in September 2020 while simultaneously, the GIP Interns and GIP Guest Scientist positions completed their final Winter season. In FY22 there will be three position types: SIP Intern, SIP Mosaic, and SIP Fellow.

SIP Intern positions are best for entry- to mid-level skill sets. Positions are 12-52 weeks in length during either the summer or winter season. Interns receive a relocation allowance of $350 plus a weekly stipend of $400 if park housing is provided, or $525 if park housing is not provided. Interns are eligible to earn hours toward the Public Lands Corps Hiring Authority and an AmeriCorps Segal Education Award if they successfully complete their term.

SIP Mosaic positions are 12 or 20 weeks during the summer season with a one week career workshop. Positions range from entry to advanced skill sets. Interns earn a weekly stipend of $420 (PLC) or $500 (DHA), all housing costs are provided and they are also eligible for either Public Land Corps Hiring Authority or Direct Hire Authority.

SIP Fellow positions target upper level undergraduate or graduate students who are interested in natural resource science careers with the federal government. These are rigorous internships that develop the participant's technical and creative thinking abilities, leadership skills, and problem-solving capabilities. These positions last 12 weeks during the summer and included a one week career workshop. Fellows received a weekly stipend of $500 and guaranteed housing coverage.

GIP Intern positions typically last for 3 months throughout the year. These are entry level natural resource science internships that focus on career exploration and building fundamental natural resource science skills in participants. GIP Intern positions are primarily for undergraduate students studying STEM fields. GIP Interns receive a weekly living allowance of $350, park-provided housing or a higher living allowance, and a $250 relocation allowance.

GIP Guest Scientist positions are more complex, may last from 3 months to one year, and are usually filled by students or recent graduates with a higher level of expertise or experience. These internships further develop the participant's technical and other professional skills. Guest Scientists receive a weekly living allowance of $400, park-provided housing or a higher living allowance, and a $250 relocation allowance.

Program Summary

The SIP Interns are administered through a NPS youth cooperative agreement and annual task agreement with Conservation Legacy (Cooperative Agreement P20AC00117). This national youth agreement authorized under the Public Lands Corps Act (16 U.S.C. §§ 1721) focuses primarily on U.S. citizens and legal residents between the ages of 16 and 30 years of age and veterans 35 years old. A key benefit of the SIP Program is that SIP Interns may be non-competitively hired by the federal government after completing 640 hours of satisfactory service in one or more appropriate conservation projects (for the Public Lands Corps Non-Competitive Hiring Authority see DOI Personnel Bulletin 17-03, May 23, 2017 and DOI Personnel Bulletin 12-13, January 22, 2013). SIP Fellows can be directly hired after successfully completing their 11-week summer DHA internship and graduating from an accredited college or university (see DOI Personnel Bulletin 12-15). The NPS strives to hire outstanding SIP alumni into NPS natural resource science positions.

The SIP Interns are affiliated with AmeriCorps, a program that engages individuals in intensive community service work with the goal of helping others and meeting critical community needs. SIP Interns are eligible for a $1,678 to $6,345 pre-tax AmeriCorps Segal Education Award upon successfully completing their internship. This award can be used for paying back student loans, continuing the participant's higher education, or for other qualifying educational expenses. In FY21 SIP Interns received $336,110 in AmeriCorps Segal Education Awards at no cost to the NPS. In addition to the AmeriCorps affiliation, medical insurance can be provided to SIP Interns if the position lasts 52 weeks.

Program Costs

NRSS provided financial assistance to 44 positions to support the cost of one, 12-week internship position. NRSS divisions, park association, the Geological Society of America Foundation, and regions also assisted parks with the costs for SIP interns. The table shown below summarizes the costs for the positions that began in FY21.

Table 1. SIP Program cost breakdown in FY21

FUNDING SOURCE		COST	SUBTOTAL
NPS	NRSS SIP*	$385,044	
	Inventory & Monitoring Program	$231,180	
	Climate Change Response Program (CCRP)**	$185,333	
	Regions	$152,084	
	Park Units & Programs***	$1,924,333	
	Subtotal Direct Costs - NPS		**$2,877,974**
Partners	The Geological Society of America Foundation	$11,070	
	Park associations	$138,229	
	Subtotal Direct Costs - Partners		**$149,299**
		TOTAL DIRECT COSTS	**$3,027,273**
		Approximate In-Kind and Cash Contribution - Program Partners	**$756,818**

*SIP Program funding includes any NRSS-related funds administered by the SIP program on behalf of NRSS and its divisions
**CCRP funds supported the SIP Fellows. Number provided is an estimate of costs from October 1, 2020 to September 15, 2021
**NRSS division funding outside of the SIP program's control or provided by IMD is considered park unit funds

COVID-19 Pandemic

The COVID-19 pandemic continued to impact the SIP Program. Top priority for every decision was the interns' safety. Coordinating organizations implemented and updated pandemic specific policies and procedures consistent with federal, state, and/or local guidance.

Impacts to the SIP Program

- SIP Interns were required to sign release of liability that includes COVID-19 specific acknowledgment of risk
- Daily health screening through Spring 2021
- Required telework work plans between participant and Supervisor/Mentor
- 8 positions worked remotely full-time
- Some position descriptions were altered to accommodate park changes from COVID-19
- NRSS provided funds for 6 interns to quarantine for 5 days before entering park units in Alaska
- 9 parks lost park housing for their intern and NRSS covered the extra stipend cost
- NPS was unable to complete in-person site visits
- Longer processing times for background checks

Support of DOI Strategic Plan

This program supports the following Department of the Interior priorities and objectives outlined in the DOI Strategic Plan for Fiscal Years 2018 – 2022:

Mission Area #1 – Conserving our Lands and Water

Goal 1 – Utilize science in land, water, species, and habitat management supporting decisions and activities.

SIP Intern Charles Salcido performed field level evaluations informing the spatial extent and abundance of paleontological resources at Theodore Roosevelt National Park, ND. His work supported the implementation of a paleontological resources inventory to better meet expectations for management of natural resources.

Goal 3 – Foster partnerships to achieve balanced stewardship and use of our public lands.

SIP Fellow Sana Saiyed created a climate change curriculum for high school students to inspire them to preserve the land and the people of Hawai'i from destructive human activities at Hawai'i Valcanoes National Park.

SIP Intern Joseph DeVito developed a holistic, sustainable strategic plan for pollinator stewardship, complementary to landscape and community efforts involving private landowners within the region as well as national NPS and other federal and state agency efforts to be implemented within the Midwest Regional Office

SIP Intern Loring Schaible setting up equipment to do a laser scan of the Pretty Rocks landslide in Denali National Park, Alaska (NPS photo).

Coordinating Organizations

National Park Service, Natural Resource Science and Stewardship Directorate

The NPS Natural Resource Stewardship and Science Directorate (NRSS) provides scientific, technical, and administrative support to national parks for the management of natural resources. NRSS has a strong commitment to providing science-based on-the-ground youth career development opportunities through the management of the Scientists in Parks Program.

For more information about SIP: https://go.nps.gov/sip

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Stewards Individual Placement Program

Stewards Individual Placement Program (Stewards) is a program of Conservation Legacy. It offers land and water management agencies and other non-profit organizations opportunities to accomplish specific projects by providing individual placements (internships) on public lands. Stewards is responsible for administering the SIP Program once the interns have been hired (enrollment, payment of stipends, travel, and housing allowance, issue resolution, and preparation of final program report).

For more information about Stewards: https://www.stewardslegacy.org/

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The Geological Society of America

The Geological Society of America (GSA) is a global professional society with a growing membership of more than 20,000 individuals in more than 100 countries. GSA provides access to elements that are essential to the professional growth of earth scientists at all levels of expertise and from all sectors: academic, government, business, and industry. The Society unites thousands of earth scientists from every corner of the globe in a common purpose to study the mysteries of our planet (and beyond) and share scientific findings. GSA is responsible for advertising, recruiting, and managing the application system for the GIP Program. GSA Foundation annually supports multiple positions in Alaska.

For more information about GSA: www.geosociety.org

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Ecological Society of America

The Ecological Society of America (ESA) is a nonpartisan, nonprofit organization of scientists founded in 1915. Our mission is to advance the science and practice of ecology and support ecologists throughout their careers. We envision a future where people embrace science to understand and foster a thriving planet. Central to ESA's work is the mentoring of young scientists in the field. ESA organizes activities during its annual meetings to help students review their resumes, hone their interviewing skills and share tips to succeed as scientists and professionals in all sectors. ESA is the administrative partner for the SIP Fellows program where we host webinars, conduct site visits and evaluations, and organize a career workshop to increase engagement and build a cohort among the students within the program.

For more information about ESA: www.esa.org

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Environment for the Americas

Environment for the Americas (EFTA) is a nonprofit organization that is committed to providing environmental education opportunities and materials throughout the Western Hemisphere, with the primary goal of improving public understanding of shared resources and their conservation. EFTA believes providing opportunities for youth to become involved in science and natural resource careers is key to ensuring the protection and future existence of quality public lands and wildlife habitat. EFTA is committed to increasing participation in environmental education and outdoor recreation across all demographics and has conducted research and efforts to reduce barriers to participation since 2009.

For more information about EFTA: www.environmentamericas.org

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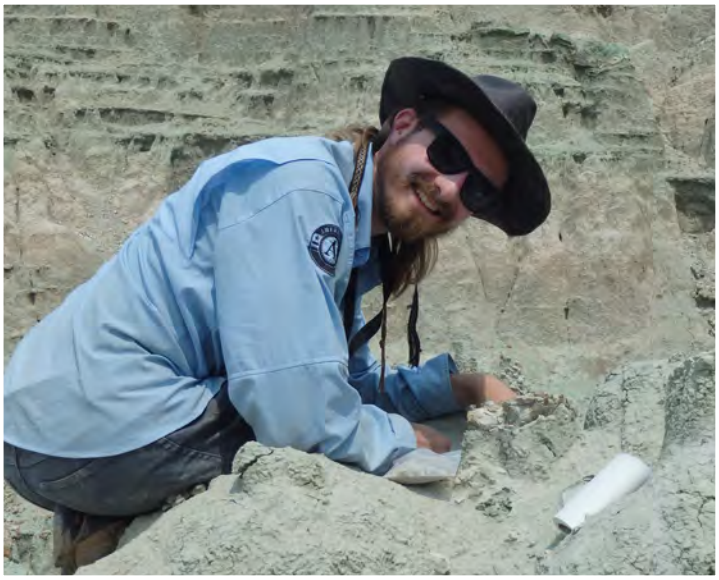
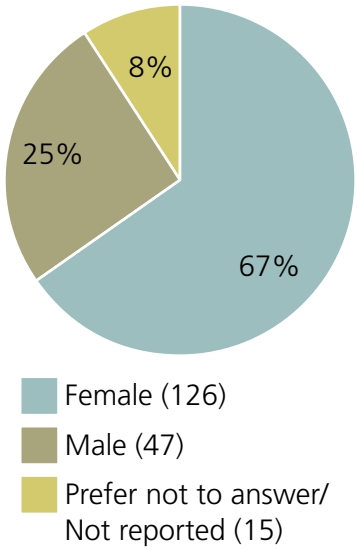


(Left) SIP Intern Ethan Shafron checking the elevation while ascending Glacier National Park's iconic Mt. Brown. (Right) SIP Intern Rudolph Hummel poses with an extinct dog skull he just found (the teeth are visible near his left hand) at John Day Fossil Beds National Monument, Oregon (NPS photos).

Demographic Information

Note: The following demographic information represents the GIP, GIP Guest Scientist, SIP Intern, and SIP Fellow participants. The SIP Mosaics demographics can be found in the Mosaics annual report.

Distribution of SIP positions by gender



Gender and Ethnicity of SIP Participants

Sixty-seven percent of SIP participants in FY21 identified as women. Women participation in the SIP Program was 7% higher than the percentage of women in the U.S. earning undergraduate degrees in science fields (55%) and over 2X the percentage of women working in the U.S. science workforce (28%) (National Science Foundation).

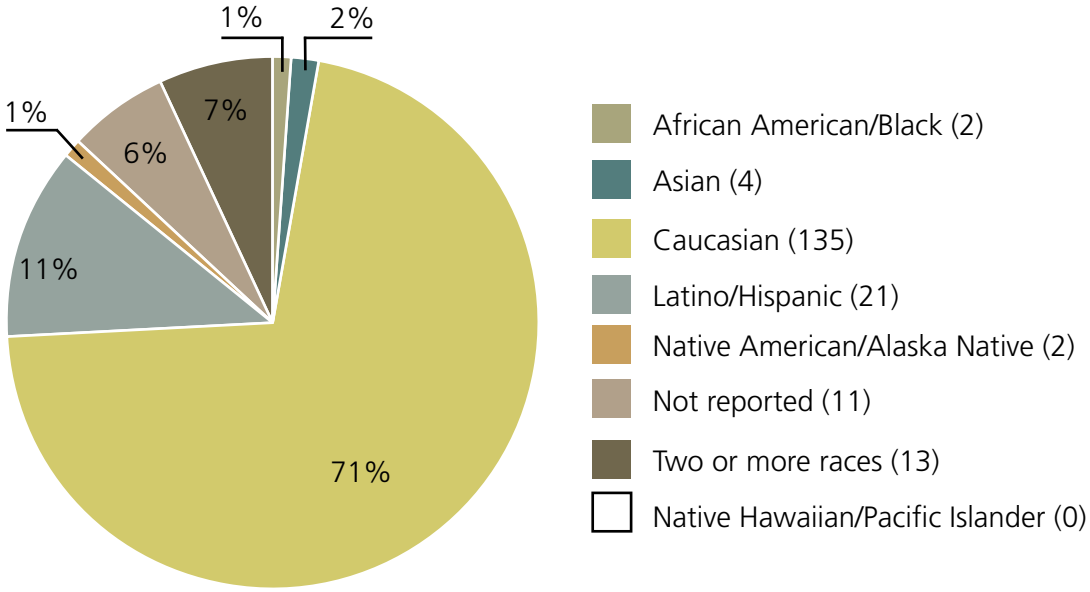
This year, 22% of participants were from racial/ethnic groups under-represented in STEM career fields. Actual numbers of racially diverse interns may be higher than reported because 6% of participants chose not to disclose their race/ethnicity.

Overall, the 22% diversity in the SIP Program does not adequately represent the diversity of the U.S. population, however it is three times more than the U.S. STEM workforce (6%) and is nearly seven times that of the NPS STEM workforce (3%). Table 2 lists the racial/ethnic diversity of the overall NPS workforce and in STEM fields. The NPS statistics were compiled from 2014 NPS employment data compiled by James Wiggins, NPS Equal Employment Opportunity Specialist.

Table 2. Diversity of the overall NPS workforce and in STEM fields (2014 NPS data).

CATEGORY	# EMPLOYEES	%
NPS Employees	23,529	100%
NPS Racial/Ethnic Diversity (excluding Caucasian) of NPS Workforce	4,183	18%
NPS workforce - Caucasian	19,346	82%
NPS Workforce – STEM fields	5,054	21%
NPS Workforce – Racial/Ethnic Diversity in STEM Fields	698	14% of NPS STEM employees, 3% of total NPS workforce

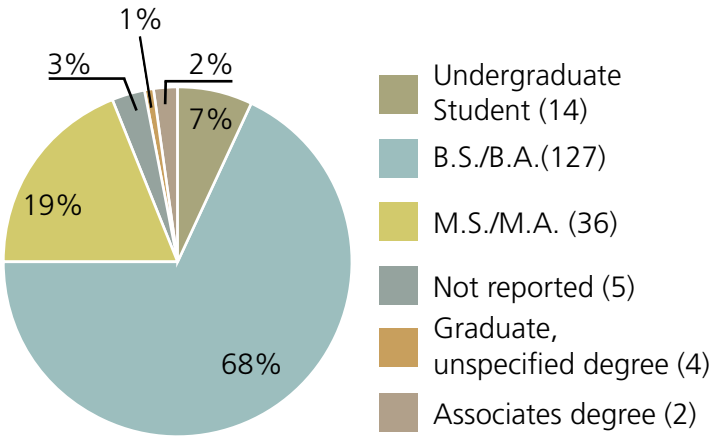
Distribution of SIP positions by race / ethnicity



Educational Status of SIP Participants

This year, seven percent of program participants reported to be undergraduate students. Sixty-eight percent of program participants reported to have received a bachelor's degree, and 19% of the interns reported receiving a master's degree demonstrating the high caliber of participants in the program.

Distribution of SIP positions by level of education



Veterans

In 2021, one veteran participated in the SIP Program. The SIP Program is proud to host veterans at National Parks throughout the year. Lenzie Ward- thank you for your service!

Schools Attended by SIP Participants

Table 3. Schools attended by SIP interns in FY21.

The table displays the universities or colleges that had two or more SIP interns participating in this year's program.

COLLEGES & UNIVERSITIES
Virginia Tech
Louisiana State University
University of Hawaii at Hilo
Carleton College
Dalhousie University
University of Vermont
Florida State University
Indiana University
South Dakota School of Mines and Technology
William & Mary
Colorado State University
Western Colorado University
University of California, Santa Cruz
University of Nevada, Las Vegas
University of Denver
University of Colorado Boulder
Colorado State University
Montana State University
University of West Florida
Williams College
University of Massachusetts Amherst

(Right) SIP Intern Allysah Fox in a video for the "Shenandoah Today" series with her supervisor/mentor and Interpretive Specialist Claire Comer, Shenandoah National Park, Virginia. (Left) SIP Intern John Flint at Kaloko fishpond using a rock hammer to place stones into the rock wall of the fishpond in Kaloko-Honokohau National Historical Park, Hawai'i (NPS photos).

List of SIP Participant Projects

Scientists in Parks (SIP) positions for FY21 are shown in Table 4.

Table 4. SIP positions with start dates in FY21.

Note: This list includes GIP, GIP Guest Scientists, SIP Interns, and SIP Fellows. Guest Scientist is labeled as GS

NPS UNIT	Position or Project Title (Intern Name)	Position Type	ID
Gates of the Arctic National Park and Preserve	Geology Assistant (Alice Bandeian)	GS	2019428
Grand Canyon-Parashant National Monument	Paleontology Assistant (Holley Flora)	GIP	2019438
Gulf Islands National Seashore	Natural Resource Management Assistant (Emily Stolz)	GIP	2020401
Death Valley National Park	Hydrology Assistant (Emmons McKinney)	GIP	2020402
Shenandoah National Park	Natural Resource Interpretive Assistant (Allysah Fox)	GIP	2020405
Hagerman Fossil Beds National Monument & Craters of the Moon National Monument and Preserve	Education Assistant (Grove Leslie)	GIP	2020407
Coronado National Memorial	Natural Resource Management Assistant (Joshua Gonzales)	GS	2020408
Yosemite National Park	Geomorphology Assistant (Autumn Helfrich)	GS	2020412
Denali National Park and Preserve	Natural Resource Management Assistant (Sarahlily Stein)	GIP	2020417
Big South Fork National River and Recreation Area	GIS Assistant (Macy Linton)	GIP	2020418
Denali National Park and Preserve	Ecology Assistant (Alena Giesche)	GS	2020419
Joshua Tree National Park	Natural Resource Interpretive Assistant (Amanda Pascali)	GIP	2020420
Kaloko-Honokōhau National Historical Park	Biology Assistant (John Flint)	GS	2020421
Southwest Alaska Inventory & Monitoring Network	Hydrology Assistant (Eliza Malakoff)	GS	2020427
Cumberland Island National Seashore; Wilderness Stewardship Division	Natural Resource Management Assistant (Bridget Murray)	GIP	2020428
Glacier National Park, Wilderness Stewardship Division	Natural Resource Management Assistant (Jillian McKenna)	GIP	2020429
Glacier National Park	GIS Assistant (Ethan Shafron)	GS	2020430
Bryce Canyon National Park	Natural Resource Interpretive Assistant (Sadie Textor)	GIP	2020432
Bryce Canyon National Park	Natural Resource Interpretive Assistant (Keith Moore)	GIP	2020433
Hagerman Fossil Beds National Monument	Paleontology Assistant (Emily Thorpe)	GS	2020435
Hagerman Fossil Beds National Monument	Paleontology Assistant (Alexander Kim)	GS	2020436
Alaska Regional Office	GIS Assistant (Dana Hansen)	GS	2020437
Grand Canyon National Park	Biology Assistant (Joel Donohue)	GS	2020441
Grand Canyon National Park	Biology Assistant (Aurora Trejo)	GS	2020442
Florissant Fossil Beds National Monument	Paleontology Assistant (Mariah Slovacek)	GIP	2020443
Southeast Coast Inventory and Monitoring Network	Ecology Assistant (Rachel Layko)	GIP	2020444

NPS UNIT	Position or Project Title (Intern Name)	Position Type	ID
Aztec Ruins National Monument	Natural Resource Interpretive Assistant (Michelle Hill)	GS	2020446
Yosemite National Park	GIS Assistant (Dorothy Shreve)	GS	2020448
Yosemite National Park	Biology Assistant (Sarah Gobris)	GS	2020452
Isle Royale National Park	GIS Assistant (Jacob Bonessi)	GS	2020456
Grand Teton National Park	GIS Assistant (Jamie McBryde)	GIP	2020457
Obed Wild and Scenic River	Geology Assistant (Maria Skarzynski)	GIP	2020458
Cuyahoga Valley National Park	Natural Resource Management Assistant (Spencer Polk)	GS	2020464
Chaco Culture National Historical Park	Science Communication Assistant (Jillian Brigham)	GS	2020469
Santa Monica National Recreation Area	Night Skies Assistant (Evan Fitzmaurice)	SIP	2020471
Klamath Inventory & Monitoring Network	Biology Assistant (Sidney Lasby)	GS	2020474
San Francisco Bay Area Network	Hydrology Assistant (Laurel Teague)	GIP	2020477
Grand Canyon National Park	Acoustic Assistant (Ellen Murphy)	GS	2020478
Tule Springs Fossil Beds National Monument	Paleontology Assistant (Lauren Parry)	GS	2020480
Tule Springs Fossil Beds National Monument	Paleontology Assistant (Esmeralda El Srouji)	GIP	2020481
Klamath Inventory & Monitoring Network	Biology Assistant (Alyxandra James)	GS	2020482
Guadalupe Mountains National Monument; Wilderness Stewardship Division	Natural Resource Management Assistant (Jane Windler)	GIP	2020483
Hagerman Fossil Beds National Monument	Paleontology Assistant (Alexandra Bonham)	GS	2020484
Geologic Resources Division-NRSS	Geomorphology Assistant (Henry Crawford)	GS	2020486
Geologic Resources Division-NRSS	Natural Resource Management Assistant (Zoe Dilles)	GS	2020487
Geologic Resources Division-NRSS	Geology Assistant (Victoria Crystal)	GS	2020488
Yellowstone National Park	Geology Assistant (Mollie Pope)	GS	2020489
IMRO - Region 6-8 Planning Program	Natural Resource Management Assistant (Ashley Daffron)	GS	2020490
Guadalupe Mountains National Monument; Wilderness Stewardship Division	Natural Resource Management Assistant [Direct Placement] (Jasmine Cutter)	GIP	2020491
Grand Canyon National Park	Acoustic Assistant (Maria deValleCoello)	GS	2020492
Grand Canyon National Park	Biology Assistant (Deron Clark)	SIP	2020493
Grand Canyon National Park - North Rim	Natural Resource Interpretive Assistant (Carmen Kraus)	SIP	2021001
Bandelier National Monument	Natural Resource Intern (Kathryn Brooks)	SIP	2021002
Bandelier National Monument	Natural Resource Intern (Marissa Ardovino)	SIP	2021003
Florissant Fossil Beds National Monument	Develop Curriculum-Based Travelling Trunk Offsite Program (Astrid Garcia)	SIP	2021006
Manassas National Battlefield Park	Natural Resource Management Assistant (Kelly Ewing)	SIP	2021007
Great Basin National Park	Dark Sky Monitoring and Public Astronomy Education and Interpretation (Serena Wurmser)	SIP	2021008

NPS UNIT	Position or Project Title (Intern Name)	Position Type	ID
Great Basin National Park	Dark Sky Measurement and Astronomy Education and Interpretation (Callum Russell)	SIP	2021009
Great Basin National Park	Dark Sky Measurement and Astronomy Education and Interpretation (Jeremy Osowski)	SIP	2021010
Fossil Butte National Monument	Fossil Excavating and Data Management in Eocene Green River Formation Quarry and Presentation of Geological and Paleontological Educational Public Programs (Sophia Cajune)	SIP	2021011
Kaloko-Honokōhau National Historical Park	Monitoring Aquatic, Marine, and Coral Reef Habitats in Kaloko-Honokōhau NHP (Danielle Wilde)	SIP	2021012
Fort Laramie National Historic Site	Survey, Collect and Preserve Ecological Resources at Fort Laramie National Historic Site. (Abigayle Hansen)	SIP	2021013
Southeast Coast Inventory & Monitoring Network, Southeast Coast Invasive Plant Management Team, Congaree National Park	Baseline Monitoring of Terrestrial Vegetation on Congaree National Park (Julieanne Montaquila)	SIP	2021014
Capitol Reef National Park	Native Grassland Restoration at Capitol Reef National Park (Sara Drake)	SIP	2021015
Theodore Roosevelt National Park	Paleontological Inventory for THRO (Charles Salcido)	SIP	2021016
Gulf Islands National Seashore	Threatened and Endangered Species Monitoring and Management – Marine Turtle Focus (Jordan Wingate)	SIP	2021019
Gulf Islands National Seashore	Threatened and Endangered Species Monitoring and Management – Marine Turtle Focus (Philip Iversen)	SIP	2021020
Upper Columbia Basin Inventory & Monitoring Network	Geospatial analysis and visualization of sagebrush steppe landscapes facing catastrophic wildfire risks (Jamela Thompson)	SIP	2021022
Rocky Mountain National Park	Restoring Vegetation Communities Through the Active Management of Various Park Projects (Raymond Flores)	SIP	2021023
Rocky Mountain National Park	Environmental Education Distance Learning Internship (Benjamin Holt)	SIP	2021024
Shenandoah National Park	Night Skies Interpretation & Education Assistant (Rebekah Everett)	SIP	2021025
Shenandoah National Park	Interpretation, Education, and Visitor Services Assistant (Marcus Tierrablanca)	SIP	2021026
Chattahoochee River National Recreation Area	Crayfish Stream Restoration Project Coordinator (Theresa Kelly)	SIP	2021027
Denali National Park and Preserve	Using ecological field work and citizen science to assess the impacts of climate change on alpine wildlife in DNP&P (Amelia Evavold)	SIP	2021030
Denali National Park and Preserve	Using ecological field work and citizen science to assess the impacts of climate change on alpine wildlife in DNP&P (Baylee Bessingpas)	SIP	2021031
Denali National Park and Preserve	Using ecological field work and citizen science to assess the impacts of climate change on alpine wildlife in DNP&P (Margaret Stoneham)	SIP	2021032
Fort Matanzas National Monument	Natural Resource Management Assistant (Katherine Sweezey)	SIP	2021033
Gulf Islands National Seashore	Florida Imperiled Shorebird Nesting Surveyor and Management Assistant (Leah Vickery)	SIP	2021036

NPS UNIT	Position or Project Title (Intern Name)	Position Type	ID
Natural Resource Stewardship and Science Directorate, Water Resources Division	Aquatic Invasive Species: Developing a toolkit to help parks tackle the challenge (Autumn Sands)	SIP	2021038
John Day Fossil Beds National Monument	Interpretive Assistant (Kaili Schroeder)	SIP	2021039
John Day Fossil Beds National Monument	Interpretive Assistant (Jasmine Reitze)	SIP	2021040
John Day Fossil Beds National Monument	Paleontology Intern (Rudolph Hummel)	SIP	2021041
John Day Fossil Beds National Monument	Paleontology Intern (Kelly Lubbers)	SIP	2021042
Chaco Culture National Historical Park	Geomorphology Assistant to Identify Unstable Slopes and Establish a Monitoring Program (Anna Sivils)	SIP	2021043
Denali National Park and Preserve	GIS Assistant (Lauren Hurst)	SIP	2021044
South Florida/Caribbean Inventory & Monitoring Network	Documenting 31 years of Vegetation Change on the South Florida Landscape. (John Sabin)	SIP	2021045
Cape Hatteras National Seashore	Develop and Enhance Geospatial Data Management for the Outer Banks Group Parks (Kegan Kleeschulte)	SIP	2021047
Bandelier National Monument	Fire History and Other Long-Term Ecological Studies in Northern New Mexico (Kara Fox)	SIP	2021048
Bandelier National Monument	Fire History and Other Long-Term Ecological Studies in Northern New Mexico (Ella Kasten)	SIP	2021049
Grand Canyon National Park	Soundscapes of Grand Canyon National Park (Brittne MacCleary)	SIP	2021051
Big Thicket National Preserve	Bat Acoustic Monitoring Pilot Study (Kira Ware)	SIP	2021054
San Juan Island National Historical Park	Island Marble Butterfly Conservation Project (Jeramy Ott)	SIP	2021056
Gulf Coast Inventory & Monitoring Network	Using GIS to monitor and protect park natural resources, through a comprehensive online database for the Gulf Coast Network (Claudia Silver)	SIP	2021058
Joshua Tree National Park	Social Science & Cultural Anthropology Assistant Researching Extreme Climate Event Related Fatalities in Joshua Tree National Park (Caroline Abramowitz)	SIP	2021059
Badlands National Park	Natural Resource Interpretive Assistant (Lydia Jones)	SIP	2021060
Badlands National Park	Natural Resource Interpretive Assistant (Serina Griffin)	SIP	2021061
Little Bighorn Battlefield National Monument	GIS Inventory and Treatment of Invasive Plants and Outreach with Park Staff and Visitors (Remi Masse)	SIP	2021062
Cape Lookout National Seashore	Sea Turtle Science and Management on Dynamic Barrier Island Ecosystem. (Rachel Hilt)	SIP	2021063
Monocacy National Battlefield	Hydrology Assistant (Olivia Boraiko)	SIP	2021064
Monocacy National Battlefield	GIS Assistant (Colleen Lewis)	SIP	2021065
Southern Plains Inventory and Monitoring Network	Grassland and Invasive Plant Monitoring Internship (Jonathan A Sigwing)	SIP	2021066
Olympic National Park	Natural Resource Interpretive Assistant (Megan Coyle)	SIP	2021067
Olympic National Park	Natural Resource Interpretive Assistant (Mallory Mintz)	SIP	2021068
Coronado National Memorial	Research and Monitoring of Physical Science Resources at Southeast Arizona Group Parks (Evan Laughlin)	SIP	2021069

NPS UNIT	Position or Project Title (Intern Name)	Position Type	ID
Mediterranean Coast Inventory & Monitoring Network	Bat and Vegetation Monitoring Intern (Nicoletta Stork)	SIP	2021071
Mediterranean Coast Inventory & Monitoring Network	Bat and Vegetation Monitoring Intern (Hunter Klein)	SIP	2021072
Fire Island National Seashore	Ecological monitoring to assess efficacy of resource management efforts (Ria Kobernuss)	SIP	2021074
Fire Island National Seashore	Ecological monitoring to assess efficacy of resource management efforts (Taylor Solorzano)	SIP	2021075
Denali National Park and Preserve	Geologic Technician (Loring Schaible)	SIP	2021076
Denali National Park and Preserve	Geologic Technician (Autumn Helfrich)	SIP	2021077
Alaska Regional Office	Geology Assistant- Abandoned Mineral Lands (Monika Fleming)	SIP	2021079
Alaska Regional Office	Updating Geographic Response Strategies in Alaska (Hayley Beitel)	SIP	2021080
Sonoran Desert Inventory & Monitoring Network	Vegetation and soil monitoring in 11 Sonoran Desert parks (Mariam Moazed)	SIP	2021081
Glacier National Park	Biological Assistant to Citizen Science Program for Innovation with Data Collection, Science Communication and Geospatial Information (Katherine Barrs)	SIP	2021082
Grand Canyon National Park	Grand Canyon National Park Paleontology Program Interns 2021 (Erikka Olson)	SIP	2021083
Katmai National Park and Preserve and the Alaska Regional Office	Assessing the condition of paleontological resources in Katmai National Park and assistance with other Paleontology projects (Matthew Harrington)	SIP	2021085
Denali National Park and Preserve	Technical Computing and Soundscape Intern (Kirby Heck)	SIP	2021086
Dry Tortugas National Park	Dry Tortugas National Park Sea Turtle Monitoring Program (Kaliegh Schlender)	SIP	2021087
Mount Rainier National Park	Night Skies - Astronomy Interpretive Intern (Andrea Minot)	SIP	2021091
Mount Rainier National Park	Interpretive Intern (Heather Silvola)	SIP	2021092
Colonial National Historical Park	Paleontology Communication and Education of COLO's Fossil Inventory (Mackenzie Chriscoe)	SIP	2021094
Pacific Island Inventory & Monitoring Network within Hawai'i Volcanoes National Park	Hawai'i Volcanoes Tropical Vegetation Monitoring (John Benner)	SIP	2021095
Pacific Island Inventory & Monitoring Network within Hawai'i Volcanoes National Park	Hawai'i Volcanoes Tropical Vegetation Monitoring (Jasmine-Marie Moku)	SIP	2021096
Pacific Island Inventory & Monitoring Network within Hawai'i Volcanoes National Park	Hawai'i Volcanoes Tropical Vegetation Monitoring (Brayden Pollvogt)	SIP	2021097

NPS UNIT	Position or Project Title (Intern Name)	Position Type	ID
Grand Teton National Park	Investigate and monitor geomorphologic landscape change in fluvial and terrestrial environments throughout Grand Teton National Park. (Elizabeth Case)	SIP	2021098
Badlands National Park	Field Survey Paleontologist (Charles Bruce)	SIP	2021102
Big Bend National Park	Data Management and GIS for restoration and monitoring activities (Kale'a Pawlak-Kjolhaug)	SIP	2021103
Region 1 office, duty station University of Rhode Island	Natural Resources Assistant focused on sea level rise at ocean and coastal national parks (Kendra Devereux)	SIP	2021104
Cape Cod National Seashore	Field Assistant for Coastal Wetland Restoration at Cape Cod National Seashore (Eliza Fitzgerald)	SIP	2021105
Midwest Regional Office-Natural Resources Stewardship and Science Division	Development of a National Park Service Pollinator Stewardship Strategic Plan for the Midwestern United States (Joseph DeVito)	SIP	2021106
Klamath Inventory & Monitoring Network	Vegetation Monitoring: composition, structure, and function (Addis Gonzalez)	SIP	2021109
Rocky Mountain Inventory & Monitoring Network	Bioassessment of Stream Ecological Integrity at Rocky Mountain National Park: Development of Multimetric Indices of Macroinvertebrate and Diatom Communities. (Matthew Robinson)	SIP	2021110
Golden Gate National Recreation Area	Golden Gate Biosphere Reserve SIP (Jordan Gorostiza)	SIP	2021111
Buffalo National River	Quantify water quality issues in a complex and interconnected karst geology environment (Rachel Wright)	SIP	2021112
Waco Mammoth National Monument	Paleontology internship with a focus on fossil preparation and collections management (Margaret Rubin)	SIP	2021113
Denver Service Center Planning Division, Visitor Use Management and Socioeconomic Branch	Planning Intern for Visitor Use Management and Socioeconomics (Everly Jazi)	SIP	2021114
Wrangell-St. Elias National Park and Preserve	Glacial geology, surficial geology mapping, and glacier monitoring in Alaska's most heavily glacierized park (Anna Carrie Thompson)	SIP	2021115
Northern Colorado Plateau Inventory & Monitoring Network	Assessing Park Needs Through Nowcasting (Brian Schlaff)	SIP	2021116
Redwood National Park	Coast redwood ecosystem restoration data gathering and project planning. (Kathryn McGee)	SIP	2021118
Redwood National Park	Coast redwood ecosystem restoration data gathering and project planning. (Sylvia van Royen)	SIP	2021119
Badlands National Park	Fossil Preparator (Bryce McElvogue)	SIP	2021120
Badlands National Park	Fossil Preparator (Grace DeVault)	SIP	2021121
Acadia National Park	Develop citizen science to monitor intertidal biodiversity in Acadia National Park (Anna Lee)	SIP	2021122
Northeast Coastal and Barrier Inventory & Monitoring Network	Science Communication Assistant (Bridget Ye)	SIP	2021123

NPS UNIT	Position or Project Title (Intern Name)	Position Type	ID
Saguaro National Park	Monitoring and management of high elevation springs in Saguaro National Park (Mattea Pulido)	SIP	2021124
Natural Resource Stewardship and Science Directorate, Water Resources Division	Ocean and Coastal Park Restoration Initiative Intern (Matthew Rigdon)	SIP	2021126
Colonial National Historical Park	Communicating Climate Change Effectively at Colonial National Historical Park (Lenzie Ward)	SIP	2021127
Central Alaska Inventory & Monitoring Network	Vegetation monitoring and research internship (Robert Smith)	SIP	2021128
Western Pennsylvania Parks	Natural Resource Support at WEPA (Corrina Yobp)	SIP	2021130
Western Pennsylvania Parks	Natural Resource Support at WEPA (Sam Govan)	SIP	2021131
National Capital Inventory & Monitoring Network	Natural Resource Monitoring in the National Capital Area (Edward Cascella)	SIP	2021132
Lava Beds National Monument	Fire on the Mountain (Jordan Kemp)	SIP	2021133
Lassen Volcanic National Park	Climate Change Impacts on a Zoonotic Disease in Alpine Ecosystem (Taylor Thomas)	SIP	2021135
Natural Resource Stewardship and Science Directorate, Water Resources Division	Natural Resource Management Assistant for GIS Mapping of Benthic Habitats at Ocean and Coastal Parks (Nina Elisaveta Loutchko)	SIP	2021136
Wupatki National Monument	Fossil Surveys and Condition Assessments in Wupatki National Monument (Chad Kwiatkowski)	SIP	2021137
Denali National Park and Preserve	Utilize vegetation monitoring to identify and understand landscape change in subarctic Alaska (Rebecca Conner)	SIP	2021138
Natural Resource Stewardship and Science Directorate, Water Resources Division	Natural Resource Management Assistant to Address Sediment and Shoreline Issues at Ocean and Coastal Parks (Alyssa Winchell)	SIP	2021139
Carlsbad Caverns National Park	Native Seed Collection and Invasive Plant Removal Within Two Historic Districts and Cultural Landscapes at Carlsbad Caverns National Park (Henry Newell)	SIP	2021141
Jewel Cave National Monument	Map and Correlate Surface and Sub-surface Geological Features at Jewel Cave, and Assist with Cave Management Activities (Riannon Colton)	SIP	2021143
Curecanti National Recreation Area	Water Quality and Blue Green Algae Assessment of Curecanti NRA (Autumn Moya)	SIP	2021146
Yellowstone National Park	Geologist/Geophysicist (Anthony Himmelberger)	SIP	2021147
Yellowstone National Park	Geologist/Geophysicist (Morgan Nasholds)	SIP	2021148
Oregon Cave National Monument and Preserve	Education Assistant (Javaria Aziz)	SIP	2021149
Biscayne National Park	Restoring coral reef ecosystems in Biscayne National Park (Zoe Dellaert)	SIP	2021150
Buffalo National River	Science Communicator (Mariana Perez)	SIP	2021152
Denali National Park and Preserve	Biological Science Assistant (Izabella Block)	SIP	2021153
Chiricahua National Monument	Natural Resource Management Assistant for Acoustic Wildlife Monitoring of Bats and Birds (Anna Kurtin)	SIP	2021154

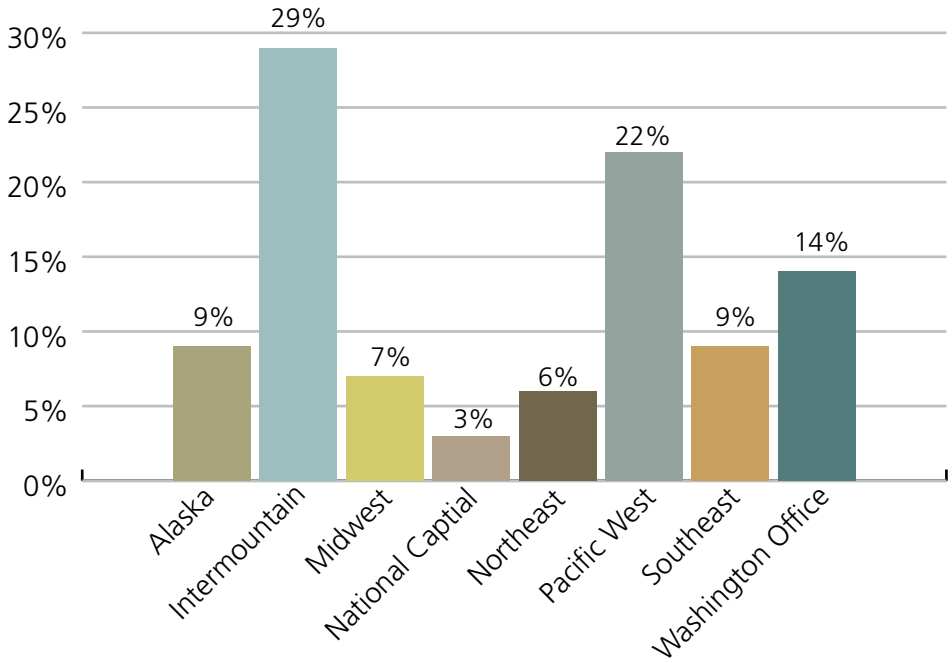
NPS UNIT	Position or Project Title (Intern Name)	Position Type	ID
Mount Rainier National Park	Bat Conservation in Washington's National Parks (Oriana Bosque)	SIP	2021155
Sierra Nevada Inventory & Monitoring Network	Monitoring giant sequoia in Sierra Nevada national parks (Ana Tobio)	SIP	2021156
Pacific Island Inventory & Monitoring Network within Hawai'i Volcanoes National Park	Hawai'i Volcanoes Tropical Vegetation Monitoring (Esaac Mazengia)	SIP	2021157
Geologic Resources Division	Scientists in Parks Program Assistant (Noah Angell)	SIP	2021158
El Malpais National Monument	Cave and Karst Assistant (Olivia Beaudette)	SIP	2021159
Northeast Coastal and Barrier Inventory & Monitoring Network	Science Communication Assistant (Colleen Keenan)	SIP	2021160
Dinosaur National Monument	Paleontology Assistant (Colton Snyder)	SIP	2021161
Badlands National Park	Fossil Preparator (Blake Chapman)	SIP	2021162
Rocky Mountain Inventory & Monitoring Network	Ecology Assistant (Matthew Robinson)	SIP	2021374
Park Facility Management Division	GIS Assistant (Miriam Ritchie)	SIP	2021437
Northeast Coastal and Barrier Network	Science Communication Assistant (Bridget Ye)	SIP	2021416
Chesapeake and Ohio Canal National Historical Park	Develop species-specific management strategies for endangered plants in light of changing climates, (Vida Svahnstrom)	Fellow	2021300
Dinosaur National Monument	Organize, collect, and communicate geospatial data on priority wildlife and plant species in Dinosau (Mary Buford Turnage)	Fellow	2021301
Grand Teton National Park	Apply ecological research and develop communication tools for Sagebrush Steppe Restoration at Grand (Sienna Wessel)	Fellow	2021302
Christiansted National Historical Park	Assessing sea turtle nesting populations at Buck Island Reef National Monument: Management implicati (Alexandra Gulick)	Fellow	2021303
Isle Royale National Park	Analysis of long term trends in bird abundance at Isle Royale National Park (Andrew Burchill)	Fellow	2021304
Golden Gate National Recreation Area	Monitoring and managing Endangered Forest Species in Muir Woods and surrounding GGNRA parklands (Andrea Salazar)	Fellow	2021305
Zion National Park	Harmful Algal Blooms in the Virgin Wild and Scenic River, Zion National Park (Hannah Bonner)	Fellow	2021306
Saguaro National Park	Wildlife and climate change in high elevation springs in Saguaro National Park (Kelsey Hollien)	Fellow	2021307
Lassen Volcanic National Park	Climate Change Impacts on a Zoonotic Disease in Alpine Ecosystem (Joelee Tooley)	Fellow	2021308
Hawai'i Volcanoes National Park	Develop climate change curriculum for high school students, focusing specifically on changes to the (Sana Saiyed)	Fellow	2021309

SIP Intern Anna Sivils drilling into sandstone for vibrating wire sensor installation at Chaco Culture National Historical Park, New Mexico. (NPS photo)

Regional Distribution of Projects

SIP participants worked throughout the National Park Service in every DOI region. Over half of the SIP positions were in the Intermountain and Pacific West Regions (29% and 22% respectively). Washinton Offices totaled 14% of projects in FY21. The percentage distribution for each region is shown in the graphic below.

Percentage Distribution of SIP positions by NPS region



Success Stories

Table 5. Past GIP/SIP participants hired into the federal workforce in 2020 and 2021

Intern Name	Park Unit/Federal Agency	Federal Position Title
Nikita Avdievitch	United States Geological Survey	Geologist
Tristan Amarral	Natural Resources Conservation Resources, National Park Service	Physical Scientist
Chelsea Bitting	Geologic Resources Divison, NPS	GS-9 Physical Scientist
Catherine Burlead	Mount Rainier National Park	Park Guide
Maaz Fareedi	Yellowstone National Park	Geologist
Ashton Hooker	Yellowstone National Park	Visual Information Specialist
Lauren Parry	Tule Springs Fossil Beds National Monument	Park Guide
Mariah Radue	US Forest Service	Geologist
Claire Schmidt	Southeast Coast Inventory & Monitoring Network, NPS	Physical Scientist
Jack Wood	Geologic Resources Division, NPS	GS-11 Physical Scientist
Lindsey Yann	Waco Mammoth National Monument	Paleontologist

Publicity Highlights

Rose Weeks and Holley Flora, NPS Article "Paleontology in Parashant: No Bones About It"
https://cms.nps.gov/articles/000/paleontology-in-parashant.htm

Lindsey Yann, Waco Tribune-Herald Article "Yann with the plan: New paleontologist looks to make most of mammoth site's potential"
https://wacotrib.com/news/local/yann-with-the-plan-new-waco-paleontologist-looks-to-make-most-of-mammoth-sites-potential/article_b1191279-32e7-56e1-a938-93de6e9e8318.html?fbclid=IwAR1cnPqV1FN3DEpzrOcmhOyRQJiQiNrVaPfAnIQTmSF_zLswJzaVzJOCcGU

Lauren Parry, NPS Article "National Parks in the History of Science: Radiocarbon Dating"
https://www.nps.gov/articles/000/radiocarbondating.htm

Autumn Helfrich and Loring Schaible, Time Article "A Climate Change-Induced Landslide Is Wreaking Havoc on Denali National Park"
https://time.com/6094213/denali-climate-change-landslide/

Alexandra Gulick, Buck Island Reef National Monument Facebook Feature of Alexandra
https://www.facebook.com/BuckIslandReefNPS/photos/a.379766931894/10157544001971895/

Sana Saiyed, Hawai'i Volcanoes National Park Instagram Feature of Sana
https://www.instagram.com/p/CR7LGsbD2q2/?utm_medium=copy_link

AMANDA PASCALI

Natural Resource Interpretive Assistant
Joshua Tree National Park, CA

As a Geoscientist-in-the-Park at Joshua Tree National Park, Amanda Pascali's main focus was science communication and interpretation. Being so close to the San Andreas fault, Amanda developed a distance learning lesson about the science of earthquakes for a group of boy scouts to emphasize the importance of understanding natural disasters and their causes, as well as to encourage the children to take an interest in STEM. This is the project that Amanda is most proud of, and that she believes will be the most helpful for her to build upon in her science communication career.

In addition, during her service term Amanda assisted scientists from the Mojave Desert Inventory and Monitoring Network with collecting water samples from the 49 Palms Oasis for chemical analysis, part of a long-term monitoring project to observe how the oasis and its organisms are changing over time. She also developed and delivered an educational evening program in front of a live, in-person audience of 25 people at an amphitheater in the park. The talk focused on the formation of the iconic igneous boulders that decorate the park and draw visitors from far and wide every year. Developing several educational infographics and figures to use in her presentation as well as designing an engaging promotional flier for the program allowed Amanda to use her multimedia and creative skills as an artist, too.

What's next for Amanda? She'll continue to work part-time as a research assistant at the University of Houston before pursuing another seasonal geology or science communication opportunity, among other personal projects. As the COVID-19 situation improves, Amanda plans to research and tour graduate schools internationally in pursuit of a master's degree and then pursue a job in science policy, science education, or environmental humanitarian aid. She would also like to be part of the movement to make our national parks and their educational resources more accessible to BIPOC and other underrepresented folks, as she is very passionate about using her skills in STEM for social change.

SIP Intern Amanda Pascali giving a distance learning lesson to a group of cub scouts about earthquakes at Joshua Tree National Park, California. (NPS Photo)

KIRBY HECK

Technical Computing and Soundscape Assistant
Denali National Park, AK

Kirby Heck's Technical Computing and Soundscape Internship at Denali National Park and Preserve has been nothing short of extraordinary. Kirby was able to contribute to a 20 year long project from the ground and the sky through the installation, maintenance, and removal, of sound monitoring stations by foot and helicopter at four sites. When Kirby wasn't at the headwaters of the Toklat River in Denali, or at the Hammond River in the Gates of the Arctic National Park, you could find him soldering circuit boards, fixing power poles, charging batteries, and testing electronic instruments. The Natural Sounds and Night Skies division of the National Park Service began collecting an inventory of natural soundscapes in Alaskan parks in the early 2000s, and has logged an acoustic record at over one hundred sites, listening for natural ambience and human impacts such as aircraft overflights.

Kirby's 14 week term presented many challenges and learning opportunities throughout. Long days filled with bushwacking, bears, and lost data, made the successes of his internship that much sweeter. While Kirby had the opportunity to see some of the best views Alaska has to offer via helicopter, he also contributed to incredibly important work from behind his desk. The algorithm that Kirby wrote has the potential to create more accessibility for smaller parks that want to preserve their soundscapes but might not have the resources to deploy expensive field instrumentation in remote wilderness areas, and instead can utilize computational methods.

As Kirby gears up to begin his PhD in Civil and Environmental Engineering at MIT studying atmospheric interactions around wind turbines, he reflects on the states of being he has long associated with national parks: solitude, fortitude, and gratitude. Through his Techinical Computing and Soundscape Internship he realized that he had been missing a key pillar in this list: quietude. He says, "The natural ambience of wild lands is a resource equal to the landscapes, wildlife, and cultural history of the National Park Service, and I believe my work has contributed to preserving quietude for future generations."

SIP Intern Kirby Heck working as a Technical Computing and Soundscape Assistant at Denali National Park, Alaska. (NPS Photo)

SARAH MARIE MARQUEZ

Condor Program Assistant
Pinnacles National Park, CA

Sarah Marquez, a Condor Program Intern at Pinnacles National Park, handled over 30 condors during her service term. Processing the condors included drawing blood, administering vaccines and medications, and other simply sampling procedures. Sarah learned many new skills, including using radio telemetry to find condor signals, placing carcasses at bait sites for them to feed on, catching condors in bait traps without injuring them, and using radiograph to find lead fragments in carcasses. She is most proud of her ability to gain all these new skills and work in a position that she believes most people would find extremely challenging and gross. Her biggest challenge was overcoming how uncomfortable and stressed she was when she initially started handling the birds, however, with more practice she gained a greater sense of confidence, which she believed helped keep the condor's calm.

SIP Intern Sarah Marie Marquez carrying field equipment at Pinnacles National Park, California. (NPS photo)

KIRA WARE

Bat Acoustic Monitoring Assistant
Big Thicket National Preserve, TX

Kira Ware, a Bat Acoustic Monitoring Intern at Big Thicket National Preserve, worked on the parks first acoustic survey for bat presence. Kira sampled 96 sampling sites, which covered the entire preserve, using NABat protocols. Kira was apart of a team that identified 8 different species and she was able to summarize the data and present it to park staff. Additionally, Kira assisted in Longleaf Pine restoration and dragonfly larvae sampling for the Dragonfly Mercury Project. Kira is most proud of her work on the bat acoustic survey because she has provided valuable baseline data for future studies. She feels that gaining more knowledge about wildlife in the National Parks is extremely important and that sharing that knowledge with the community through social media and outreach could enhance their relationship.

SIP Intern Kira Ware taking down the acoustic set up for data processing at Big Thicket National Preserve, Texas. (NPS photo)

LAUREN PARRY

Paleontology Assistant

Tule Springs Fossil Beds National Monument, NV

Serving as a Paleontology Assistant at Tule Springs Fossil Beds National Monument (TUSK), Lauren Parry has played an integral role in park operations over the past year and a half. To highlight a few accomplishments, Lauren has conducted paleontology locality monitoring, facilitated a fossil identification workshop for visually impaired students, and served as the site lead for the Southern Nevada Agency Partnership Engaging Communities project. Further yet, Lauren assisted in the development of TUSK's first official trail, as well as the associated interpretive content. She also wrote an article for the NPS Park Paleontology News publication. Lauren was very proud of this project, and thoroughly enjoys communicating science to the public.

Perhaps most importantly, Lauren assisted in planning for the TUSK General Management Plan. Having attended a research trip to other National Parks in the Southwest, she helped complete a report detailing the trip's accomplishments and recommendations for the General Management Plan. Lauren and her supervisor then drafted a Plan that fulfills the enabling legislation of the park and furthers the mission of the National Park Service.

Lauren's service is particularly impressive given the fact that she's been able to accomplish all of this throughout the COVID-19 pandemic, which has been very challenging. However, Lauren appreciates the work she's doing, stating, "National Parks help tell the stories of our country, both beautiful and painful. No one is ever done learning in their life, and National Parks are places for both staff and visitors to be lifelong learners. Being in nature and knowing it is protected from destruction is just unbeatable."

(Top) GIP Intern Lauren Parry observing freshwater snails in a Tinaja at Desert Research Learning Center in Tucson, AZ.(Bottom) GIP Lauren Parry conducts site monitoring at a paleontological locality at Tule Springs Fossil Beds National Monument Arizona. (NPS Photos)

SIP Intern Program Evaluations

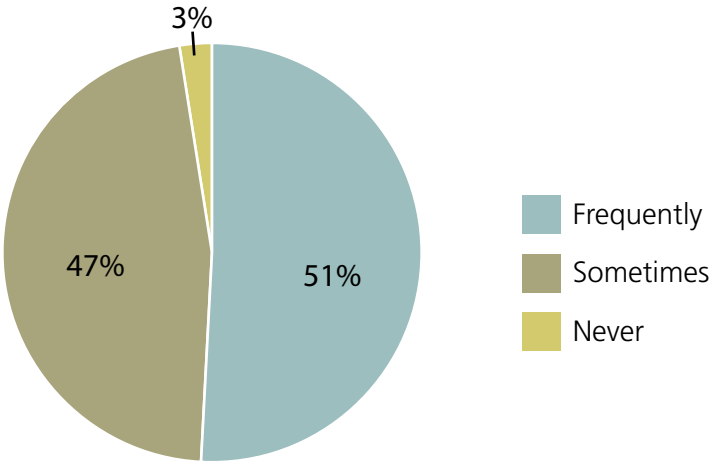
SIP Interns were asked to complete pre-internship and post-internship evaluations in order to help the NPS understand the participants' backgrounds, experiences, and to improve the program and interns' experiences.

Note: The following program evaluations show data for the GIP, GIP Guest Scientists, and SIP Intern participants

Pre-Internship

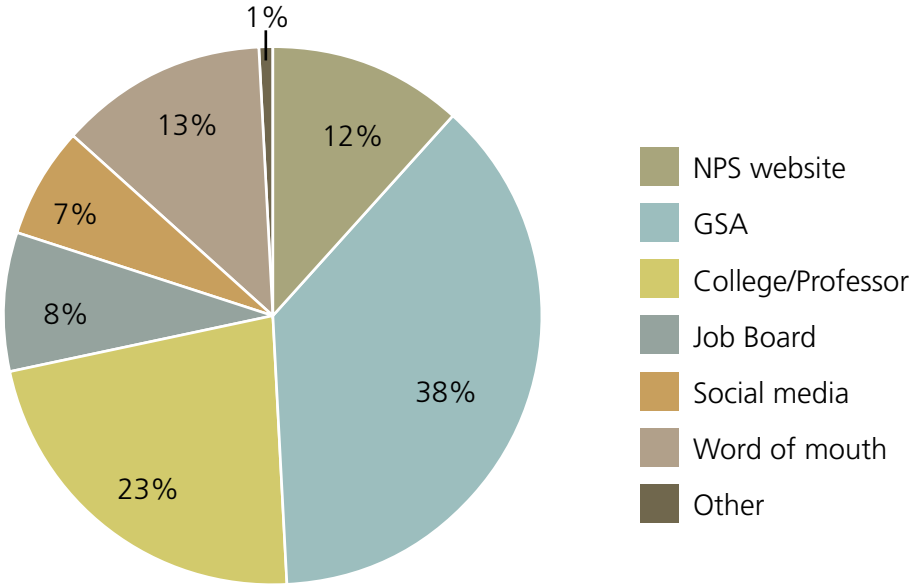
Prior to this internship, had you ever visited a National Park?

Prior to their internships, nearly all of the SIPs (97%) had visited a national park, with the majority of participants (51%) having frequently visited a national park.



How did you first hear about this internship?

Thirty-eight percent of SIP Interns learned about the program through The Geological Society of America website, emails, and annual meeting. A portion of the SIP Interns learned about the program from their college/professor (23%) or word of mouth from previous interns or NPS staff (13%). Other sources include the NPS website, university and conservation related job boards, and social media posts.

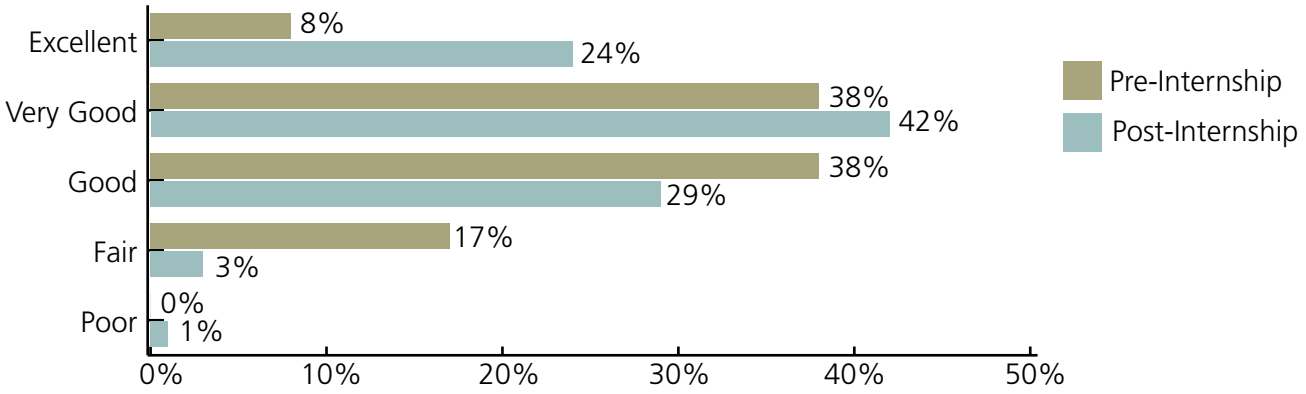


Knowledge and Interest in Federal Careers

Participants were asked to report their understanding of job opportunities available in government and their interest in pursuing a career with a state or federal public land agency in both the pre-internship and post-internship surveys.

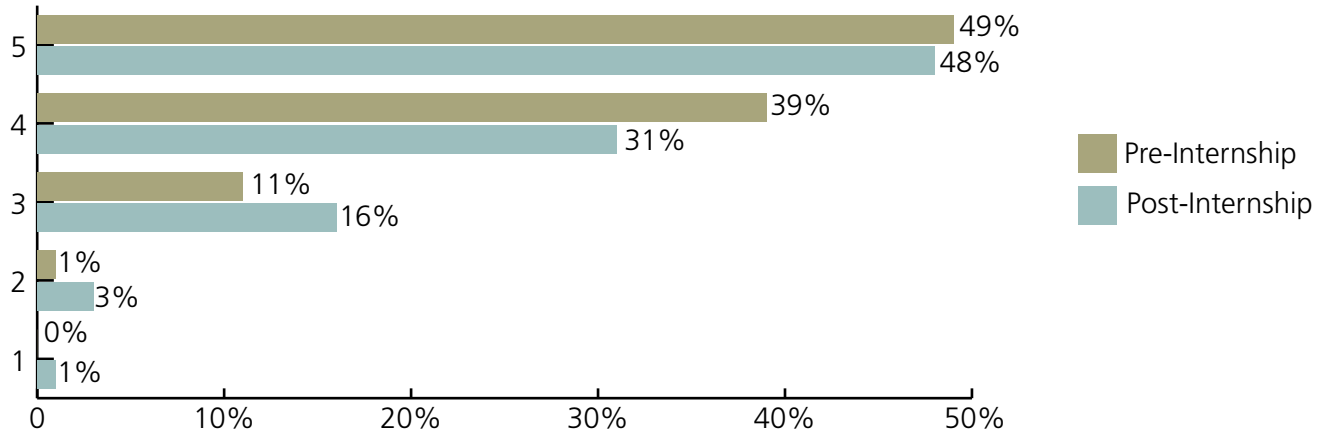
SIP interns understanding of job opportunities available in Federal, State, & Local Government Agencies pre-internship and post-internship

The number of participants who reported an Excellent knowledge of job opportunities in Federal, State, and Local government agencies tripled from pre-internship to post-internship survey results.



SIP interns that reported an interest in pursuing a career with state or federal public land agencies pre-internship and post-internship

Participants were asked to provide their likelihood to pursue a federal career pre-internship and post-internship. Five being the most likely and one being the least likely. The percentage of participants who responded that they were very likely to pursue a career with state or federal public land agencies increased slightly after the completion of internships.



Participant Quotes

Please describe your favorite aspect of your experience as a GIP/SIP participant.

- "My favorite aspect of being a GIP participant is the opportunity to work on NPS land and contribute to preservation of natural resources while also receiving more new experiences and developing more new skill-sets than I could have hoped for."
- "My favorite aspect is being able to share my knowledge and understanding of a resource with guests from diverse backgrounds. I love being able to provide visitors opportunities to connect with our public lands through interpretation."
- "My favorite aspect about this position was learning just how vast the learning and education resources are even for employees in the NPS. I had the opportunity to expand my knowledge and skill base in several different fields other than geology during this position."

SIP Fellow Andrea Salazar and NPS employee Bill Merkle tracking coyotes in the Marin Headlands at Golden Gate National Recreation Area, California (NPS Photo).

Do you feel as if your project work made a contribution towards the mission of the National Park Service? How so or why not?

- "Yes! I am really excited that my curriculum will be used at the park with multiple school groups, and I think it specifically addresses NPS missions related to educating the next generation on how and why we need to preserve our resources."
- "Yes, my projects allowed visitors who cannot visit the site in-person for whatever reason to still get a sense of what the site protects and gain an appreciation for conservation."
- "Not only does the project I worked on fully support the mission through the restoration, reclamation, and conservation of degraded wetlands or coastal areas, but it also has taught me so much. Likewise, it has inspired me in my path through completion of my master's degree. I am more certain than ever that I have chosen a field of study best suited for me and it has reinvigorated my love of both the environment as well as natural resource management."

If you could make one recommendation to the Director of the National Park Service on how the NPS can better connect with young people/adults what would you say?

- "Programming that is geared specifically to youth/young adults and how we can use specific skills to make a clear impact. If these programs covered things we're concerned about: climate change, making an impact in our communities, and well-paying jobs, I think NPS would get a lot more interest from our age group. I also think people our age just don't recognize/realize the type of work NPS really does!"
- "I would say that diversity and inclusion within the park staff and outward recognition of land history is crucial to spark the interest of young people. Representation is everything."
- "There could be a compilation of resources for training/education for people interested in continuing in a career towards the park service. Young people want skills to work in a place that aligns with their values. Workshops and courses in conceptual topics like environmental justice and practical skills like GIS would draw young people to learn and contribute to NPS."

SIP Fellows

Program Summary

SIP Fellows is a competitive internship program for high-achieving upper-level undergraduate and graduate students to conduct rigorous and innovative projects that address novel management needs related to natural resources, park infrastructure, visitor use, and interpretation and education in NPS park and program offices. SIP Fellows is an approved Direct Hire Authority – Resource Assistant Internship program (DHA-RAI). Fellows who successfully complete the internship and the requirements of their academic degree program are eligible to be hired without competition into permanent positions in select land agencies within the U.S. Department of Interior (DOI).

Program Objectives

- Students gain valuable work experience, develop leadership skills, and explore career paths in the Department of the Interior.
- NPS parks and programs utilize innovative, cutting-edge science to address management challenges in national parks.
- NPS builds the next generation of leaders and a more diverse professional workforce through participation in the Direct Hire Authority for Resource Assistant Internship Programs.

Webinars

During the internship, the SIP Fellows team organized check-ins with interns and a professional development webinar series. The check-ins offered interns a place to meet informally and discuss amongst each other their internship progress. The webinar series provided additional professional development on a variety of topics from NPS federal resume writing, DHA, to science communication.

Table 6. SIP Fellows Webinar Schedule

Date	Topic
May 10, 2021	SIP Fellows Orientation
May 11, 2021	NPS Workplace Harassment
May 18, 2021	Direct Hire Authority-Resource Assistant
June 1, 2021	Resumes and Navigating USAJobs
June 8, 2021	Blogging, Social Media, Water Cooler Chats
June 15, 2021	Fellows Check-in: DHA/Networking/ Blogging
June 22, 2021	Science Communication and Policy Workshop
July 6, 2021	Fellows Check-in: Presentation and Closeout Requirements
July 30, 2021	Fellows Check-in: Presentation Practice

SIP Fellow Kelsey Hollien uses a Go-Pro to collect underwater video footage of invertebrates in one of the high-elevation springs for the social media pages, Saguaro National Park, Arizona (NPS Photo).

Career Workshop

SIP Fellows participated in a four-day virtual Career Workshop from August 2-5, 2021. Originally planned to be in Washington DC, the Career Workshop was moved online due to COVID-19 restrictions. This year's Career Workshop was co-organized by ESA staff, NPS Youth Programs DIvision, NRSS, and the Environment for the Americas to host 70 students from SIP Fellows, SIP Mosaics, and Latino Heritage Internship Programs. During the Career Workshop, interns participated in sessions related to climate change, navigating USA jobs, networking with National Park Service staff, early career panels, and orally presented their summer projects. SIP Fellows presentations can be viewed on the ESA YouTube channel (https://www.youtube.com/playlist?list=PLxVJkgIHJynZRTc3DHUUxPELA0qxngQFn). The workshop provided an important conclusion to the internship experience, and culminated with interns sharing photos and stories of their personal experiences during the summer.

SIP Fellows and admin staff at the Early Career Panel during the virtual Career Workshop on August 4, 2021(NPS Photo).

Professional Conference Participation

In addition to the Career Workshop, each SIP Fellow was offered the unique opportunity to participate in an Annual Meeting hosted by either the ESA or the Geological Society of America (GSA) to provide additional professional development. Eight of the ten SIP Fellows elected to participate in the 2021 ESA Virtual Annual Meeting, while the other two, elected to go to GSAs in person meeting held in Portland, Oregon. Annual meetings held by professional societies offer content-rich programs allowing for SIP Fellows to participate in numerous session types that are directly related to their own professional interests.

Science Communication Engagement

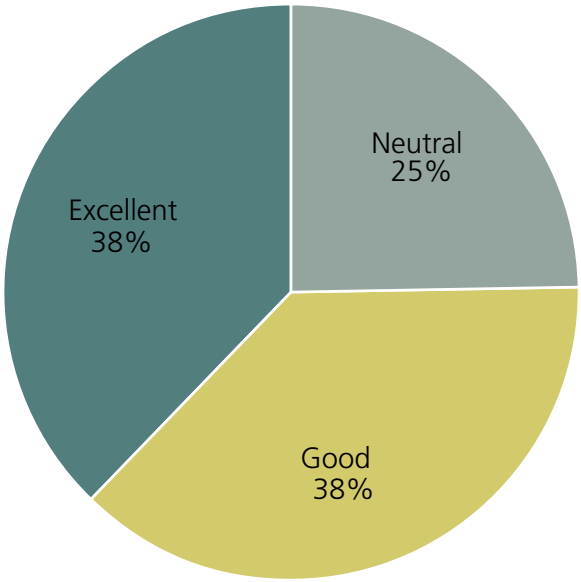
Throughout the summer the SIP Fellow's participated in a series of science communication engagement activities including writing blog posts, conducting Instagram takeovers, and creating a TikTok account along with fun videos. These frequent opportunities to engage in social media posts allowed other interns, their supervisors/mentors, and the public to see their science all while living and working at a National Park. This fall, after successful completion of the program, the SIP Fellows will serve as guest hosts on ESA's Water Cooler Chats (WCC). The Water Cooler Chats are informal Zoom meetings that provide a platform for scientists and educators to discuss their recent work, educate the public, and share information with each other during an open discussion webinar. The SIP Fellows WCC series will be held from September 2021 – January 2022 and provides the interns an opportunity to get their science out to the public, while also promoting ESA's educational programs, and encouraging future students to apply. In addition to webinars and social media, the SIP Fellows participated in a GroupMe chat to increase program wide communication and to help build a cohort mentality among the group.

SIP Fellows Program Evaluations

SIP Fellows were asked to complete a post-internship evaluation in order to help the NPS improve the program and intern experience.

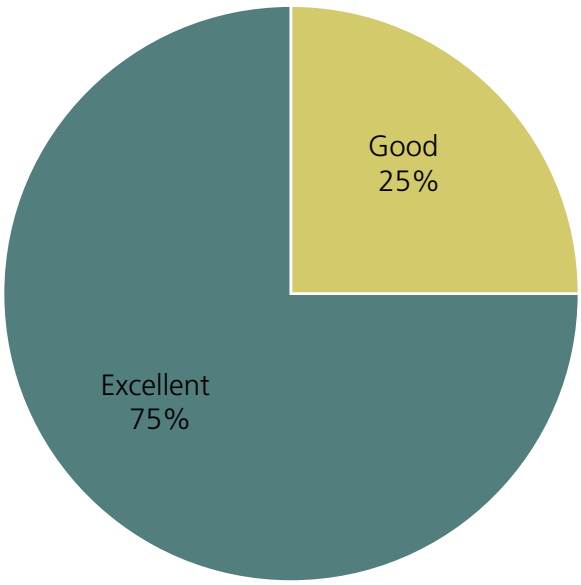
Quality of project design

Projects were designed in advance by the supervisors/mentors. There is a possibility that aspects of the project design changed due to COVID or other factors beyond their control i.e., wildfires. Note: There were zero responses for "Poor" and "Fair".



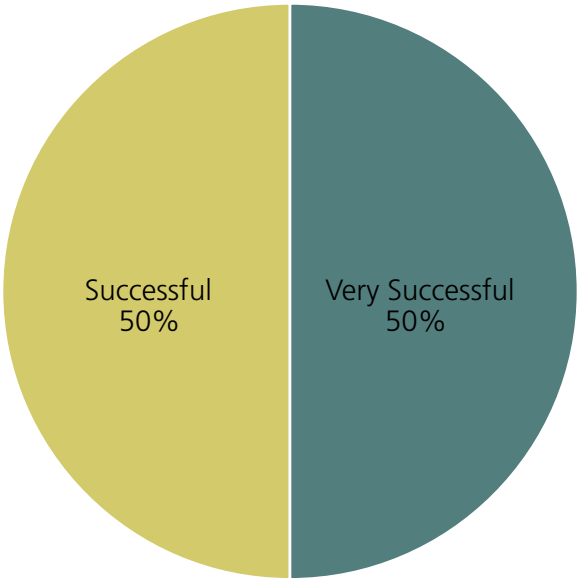
Career Workshop: Career Conversations rating

The highest rated session from the Career Workshop was Career Converstions where Fellows spoke one-on-one with established NPS employees to ask questions and gain insight into a federal career. Note: There were zero responses for "Poor", "Fair, and "Neutral".



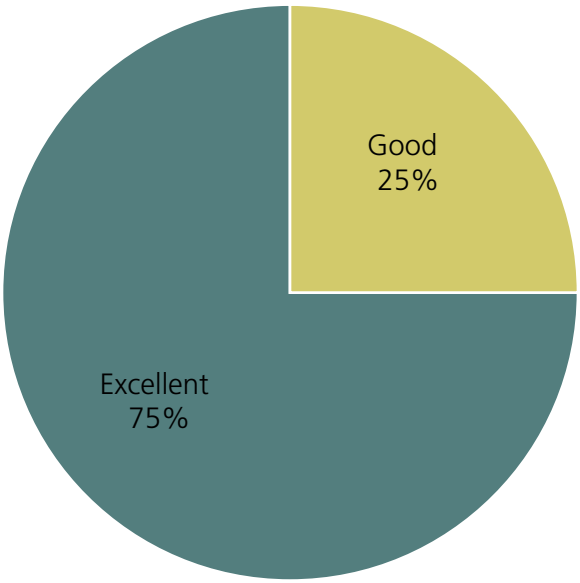
Mentoring goals success

SIP Fellows and their supervisors/mentors outlined different ways in which to build a mentoring relationship.Fellows were asked to rate on a scale from 1 (Very Unsuccessful) to 5 (Very Successful), how successful were they and their supervisor/mentor at meeting their mentoring goals. Note: There were zero responses for "Very Unsuccessful", Unsuccessful", and "Neutral".



Overall internship experience

Twenty-five percent of SIP Fellows surveyed reported that they had a "Good" overall internship experience and seventy-five percent reported an "Excellent" overall experience. Note: There were zero responses for "Poor", "Fair" or "Neutral".



SIP Fellows Bios

SIENNA WESSEL

Apply ecological research and develop communication tools for Sagebrush Steppe Restoration, Grand Teton National Park

I am pursuing a master's degree in Botany at the University of Wyoming. My research is focused on understanding the responses of imperiled sagebrush steppe communities to restoration efforts and incorporating ecological theory to improve restoration outcomes in the face of climate change.

HANNAH BONNER

Harmful Algal Blooms in the Virgin Wild and Scenic River, Zion National Park

As a PhD student at the University of Colorado Boulder, I study the amount of water available in the seasonal snowpacks. Using a combined modeling and empirical approach, my research aims to expand our understanding of forest-snow processes and enable more accurate predictions of snow water equivalent.

MARY BUFORD TURNAGE

Organize, collect, and communicate geospatial data on priority wildlife and plant species, Dinosaur National Monument

I am a graduate student studying Conservation Medicine at Tufts University, which focuses on the intersection of human, animal, and environmental health. During this degree I've grown more interested in the human systems and industries that threaten wildlife and ecosystems, rather than the wildlife species themselves, especially relating to agriculture, plastics, and deforestation.

SANA SAIYED

Develop climate change curriculum for high school students, focusing specifically on changes to the island of Hawai'i, Hawai'i Volcanoes National Park

I'm a PhD candidate in the Department of Anthropology at the University of Notre Dame. I study human-monkey entanglements in India by exploring how human cultural dynamics impact monkey socioecology (and vice-versa). I am particularly interested in how to use this information to create effective conservation and wildlife management strategies alongside local community members.

ANDREW BURCHILL

Analysis of long-term trends in bird abundance, Isle Royale National Park

I am currently finishing up my PhD work on collective animal behavior and complex adaptive systems at Arizona State University. My thesis focuses on how teams of ants, without leaders or language, manage to cooperate to solve very complicated challenges. Becoming a government scientist is my main career goal! I see this as a wonderful way to continue my love of field work, data analysis, and public outreach.

ANDREA SALAZAR

Monitoring and managing Endangered Forest Species in Muir Woods and surrounding GGNRA parklands, Golden Gate National Recreation Area

I am a junior transfer at UC Berkeley (Huichin land) majoring in Ecosystem Management and Forestry and minoring in Ethnic Studies. I'm interested in combining diverse areas of study to develop an interdisciplinary approach to solving environmental problems. I believe it is critical to incorporate historical and cultural awareness as a scientist to better serve communities.

VIDA SVAHNSTROM

Develop species-specific management strategies for endangered plants in light of changing climates, hydrologic conditions, and urban development, Chesapeake and Ohio Canal National Historic Park

I am a graduating senior at the University of St Andrews in Scotland, where I majored in Evolutionary Biology and completed a dissertation on automated extinction risk assessments for plants. I will be starting a Master's degree in Plant and Fungal Taxonomy, Diversity, and Conservation at the Royal Botanic Gardens, Kew in London next fall to further pursue this passion.

ALEXANDRA GULICK

Assessing Sea turtle nesting populations at Buck Island Reef National Monument: Management implications of recovering populations, Christiansted National Historical Park

I am currently a PhD Candidate in the Department of Biology and Archie Carr Center for Sea Turtle Research at the University of Florida. My doctoral research focuses on the grazing dynamics and foraging behavior of recovering green turtle populations in Caribbean seagrass ecosystems. My passion for biology and appreciation for natural resources stem from spending my childhood on a cattle ranch in rural Eastern Oregon.

KELSEY HOLLIEN

Wildlife and climate change in high elevation springs, Saguaro National Park

I am a graduate student at the University of Arizona in the School of Natural Resources and the Environment. I am an aquatic ecologist with a focus in macroinvertebrate community ecology. I have worked with everything from food web dynamics in desert springs to aquatic invertebrate communities in effluent-dominated urban streams. My thesis work now focuses on the impact of intermittency on macroinvertebrate communities and biodiversity in arid-land stream systems.

JOELEE TOOLEY

Climate Change Impacts on a Zoonotic Disease in Alpine Ecosystem, Lassen Volcanic National Park

I am currently enrolled at SUNY College of Environmental Science and Forestry (ESF) where I am obtaining my M.P.S. in Fish and Wildlife Biology and Management. My studies have been focused on mammals and their management, as well as applied wildlife science methods such as occupancy modeling, adaptive management, GIS, landscape ecology etc.

Financial Contributions

Special Thanks to Sally and Bob Newcomb

Sally and Bob Newcomb began supporting the Geoscientists-in-the-Parks Program in 2007 through their partnership with the Geological Society of America Foundation (GSAF). They hoped to encourage aspiring scientists to grow and challenge themselves by pursuing once-in-a-lifetime work experiences in the unique setting of Denali National Park and Preserve, Alaska.

"Keeping up with the interns, reading their reports, going to their papers and posters at GSA meetings, all have been very rewarding as well as just plain fun, giving us a view of the world we could never otherwise have, as well as introducing us to a series of talented and dedicated young people."

- Sally Newcomb

The program warmly recognizes Sally and Bob Newcomb for their support of SIP opportunities that help the next generation of stewards meet today's challenges. The Newcombs have partnered with GSAF to support 47 SIPs at Denali National Park and Preserve over the last 14 years.

Park Associations

In FY21, eight park associations contributed to GIP/SIP projects throughout the service. The SIP program would like to thank the Grand Canyon Conservancy, Friends of the Florissant Fossil Beds,Isle Royale & Keweenaw Parks Association, Shenandoah National Park Trust, Protectors of Tule Springs, Zion Forever Project, Alaska Geographic, Badlands Natural History Association.

SIP Fellow Andrew Burchill holding a red-eyed vireo while in the field at Isle Royale National Park, Michigan. (NPS Photo)

Conclusion

The National Park Service successfully consolidated the Geoscientists-in-the-Parks, Mosaics in Science, and Future Park Leaders Programs and completed the inaugural year of the Scientists in Parks Program. While GIP positions continued through early 2021, the SIP Program issued the first call for proposals in September 2020 and SIP Interns, Mosacis, and Fellows started their positions in Summer 2021.

In the first year, SIP managed 213 interns in 117 parks and offices in every DOI region. Scientists in Parks participants provided demonstratable benefits to NPS units, program participants, and the public. SIPs completed projects related to critical natural resource management needs in parks while navigating constantly changing protocols during the COVID-19 pandemic. Interns benefitted from the program with training from National Park Service employees, potential qualifying hours toward the Public Lands Corps Non-Competitive Hiring Authority or the Direct Hire Authority, and either a virutal career workshop or education award stipend. The SIP program and park units promote the stewardship of public lands and encouraging the next generation of park leaders.

Funding from the NPS Natural Resource Stewardship and Science Directorate, regions, parks, networks, central offices, park associations, and the substantial cost share by the program partners has leveraged NPS funding to complete highly critical science projects for the NPS, training for America's youth, and furthering the NPS mission. These internship opportunities will help grow a stronger and more diverse STEM workforce in the NPS and throughout the American workforce.

Acknowledgments

The National Park Service would like to acknowledge the contributions of the 213 awesome Scientists in Parks participants. Every SIP provided valuable research, analyses, and essential natural resource science work that furthers the goals and objectives of the NPS and grows each participant professionally.

NPS is also grateful for the wonderful supervisors and mentors who provided essential support for the program by identifying projects, overseeing the participant's work, ensuring project success, and providing mentoring and guidance to help the interns grow technically and professionally.

Park associations, parks, NPS Directorates, networks, and regions provided funding for SIP positions throughout the Service. This funding greatly increased the park's ability to bring interns to parks and central offices while gaining valuable work experience.

The NPS Youth Programs Division provided valuable input and guidance to help improve and grow the SIP Program. Special thanks to Youth Programs Division Chief, George McDonald, for his continued support and feedback on the program and Ernestine White for her invaluable knowledge and dedication in supporting the internship programs.

The SIP Program would like to thank Ray Sauvajot, Guy Adema, and Harold Pranger with the Natural Resource Stewardship and Science Directorate, for their ongoing support of the program. The SIP Program would like to recognize their financial and administrative support for the support the future generation of park stewards.

David Joseph, NPS retiree, maintained the program database. David was integral in keeping the database running and updated for financial and program reports.

GSA provided support advertising and recruiting candidates to help the NPS find the best and brightest interns and managed the program's online application system. The NPS sincerely appreciates the great work of Matt Dawson and Lesley Petrie.

We acknowledge Stewards for providing outstanding support including completing all enrollment paperwork with the interns, working closely with the supervisors and SIPs to ensure success of the program, administering the AmeriCorps component of the program, and assisting with financials. We appreciate the excellent work of Joey Ruehrwein, Krista Rogers, Emma Savely, Stacey Alfandre, the program coordinators, and many others at Stewards.

The Ecological Society of America provided outstanding care and support for the SIP Fellows. They recurited, advertised, and provided day-to-day administration for the Fellows. We appreciate Jessica Johnston and Teresa Mourad for being flexible and understanding as the SIP program grew this year.

Environment for the Americas are leaders in diversity internships. The SIP Program is grateful for all of their work for the Mosaics in Science Diversity Internship Program. We want to thank Susan Bonfield, Sheylda Diaz-Mendez, Shanelle Thevarajah, and Griselda Landa-Poses for their passion and dedication to program improvement.

SIP Intern administrators at the virtual end of year meeting on September, 21, 2021. (Top Row): Kiersten Jarvis, Joey Ruehrwein. (Third Row from Bottom): Chelsea Bitting, Lesley Petrie, Krista Rogers. (Second Row from Bottom): Emma Savely, Noah Angell. (Bottom Row): Melanie Wood, Matt Dawson.

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